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NEET ALTERNATING CURRENT — TRANSFORMERS — PYQS

Max. Marks: 40 **Questions:** 10

Section A (MCQ) — 10 questions

Q.1 In an ideal transformer, the turns ratio is $\frac{N_P}{N_S} = \frac{1}{2}$. The ratio $V_S:V_P$ is equal to (the symbols carry their usual meaning) : [NEET (UG) 2024]

(1) 1:2 (2) 2:1 (3) 1:1 (4) 1:4

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Q.2 A step up transformer is connected to an ac mains supply of 220 V to operate at 11000 V, 88 watt. The current in the secondary circuit, ignoring the power loss in the transformer, is [RE-NEET (UG) 2024]

(1) 8 mA (2) 4 mA (3) 0.4 A (4) 4 A

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Q.3 A 12 V, 60 W lamp is connected to the secondary of a step down transformer, whose primary is connected to ac mains of 220 V. Assuming the transformer to be ideal, what is the current in the primary winding? [NEET (UG) 2023]

(1) 2.7 A (2) 3.7 A (3) 0.37 A (4) 0.27 A

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Q.4 A step down transformer connected to an ac mains supply of 220 V is made to operate at 11 V, 44 W lamp. Ignoring power losses in the transformer, what is the current in the primary circuit ? [NEET (UG) 2021]

(1) 4 A (2) 0.2 A (3) 0.4 A (4) 2 A

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Q.5 A transformer having efficiency of 90% is working on 200 V and 3 kW power supply. If the current in the secondary coil is 6 A, the voltage across the secondary coil and the current in the primary coil respectively are [AIPMT 2014]

(1) 300 V, 15 A (2) 450 V, 15 A

(3) 450 V, 13.5 A (4) 600 V, 15 A

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Q.6 The primary of a transformer when connected to a dc battery of 10 Volt draws a current of 1 mA. The number of turns of the primary and secondary windings are 50 and 100 respectively. The voltage in the secondary and the current drawn by the circuit in the secondary are respectively [NEET 2013 (Karnataka)]

(1) 20 V and 2.0 mA

(2) 10 V and 0.5 mA

(3) Zero volt and therefore no current

(4) 20 V and 0.5 mA

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Q.7 A 220 volt input is supplied to a transformer. The output circuit draws a current of 2.0 ampere at 440 volts. If the efficiency of the transformer is 80%, the current drawn by the primary windings of the transformer is [AIPMT 2010 (Prelims)]

(1) 3.6 ampere (2) 2.8 ampere

(3) 2.5 ampere (4) 5.0 ampere

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Q.8 The primary and secondary coils of a transformer have 50 and 1500 turns respectively. If the magnetic flux φ linked with the primary coil is given by $\varphi = \varphi_0 + 4t$, where φ is in webers, t is time in seconds and φ_0 is a constant, the output voltage across the secondary coil is [AIPMT 2007]

(1) 120 volt (2) 220 volts

(3) 30 volts (4) 90 volts

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Q.9 A transformer is used to light a 100 W and 110 V lamp from a 220 V mains. If the main current is 0.5 amp, the efficiency of the transformer is approximately [AIPMT 2007]

(1) 50% (2) 90% (3) 10% (4) 30%

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Q.10 The core of a transformer is laminated because [AIPMT 2006]

(1) ratio of voltage in primary and secondary may be increased

(2) energy losses due to eddy currents may be minimised

(3) the weight of the transformer may be reduced

(4) rusting of the core may be prevented.

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ANSWER KEY

Ques.	1	2	3	4	5	6	7	8	9	10	
Ans.	**2**	**1**	**4**	**2**	**2**	**3**	**4**	**1**	**2**	**2**	